

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-26 (Canceled).

27. (Currently Amended) A semiconductor device comprising:  
a drain layer having a first conductivity type;  
a drift layer having the first conductivity type, which is formed on the drain layer and has an impurity concentration lower than that in the drain layer; and  
a RESURF layer having a second conductivity type and formed to extend from a surface of the drift layer into the drain layer, the RESURF layer forming a superjunction structure together with the drift layer and forming a depletion layer in the drift layer; and  
one of a first insulating film and first semiconductor layer formed to extend from a surface of the RESURF layer to the drain layer, the first semiconductor layer having an impurity concentration lower than those in the drift layer and RESURF layer, the RESURF layer being located between the drain layer and one of the first insulating film and first semiconductor layer and between the drift layer and one of the first insulating film and first semiconductor layer.

28. (Canceled)

29. (Canceled)

30. (Currently Amended) The device according to claim [[28]] 27, further comprising:

a base layer having the second conductivity type and formed in surface regions of the drift layer and RESURF layer;

a source layer having the first conductivity type and formed in a surface region of the base layer; and

a gate electrode formed on the base layer between the drift layer and the source layer with a gate insulating film interposed therebetween.

31. (Original) The device according to claim 30, further comprising a second semiconductor layer having the first conductivity type, which is formed between the RESURF layer and the drain layer and between the RESURF layer and the drift layer and has an impurity concentration higher than that in the drift layer.

32. (Original) The device according to claim 30, wherein a bottom surface of the RESURF layer is located at a position deeper than a bottom surface of the drift layer.

33. (Original) The device according to claim 30, wherein the RESURF layer has a planar pattern with a stripe shape in a first direction along the gate electrode in an element region where a semiconductor element is present, a plurality of RESURF layers are formed at an element terminating portion in a second direction perpendicular to the first direction, and the plurality of RESURF layers at the element terminating portion are electrically connected.

34. (Withdrawn) The device according to claim 33, further comprising one of a conductive film and third semiconductor layer formed on the RESURF layer and drift layer to connect the plurality of RESURF layers at the element terminating portion.

35. (Withdrawn) The device according to claim 34, wherein an upper portion of one of the first insulating film and first semiconductor layer at the element terminating portion is recessed, and the recessed region is further filled with the RESURF layer.

36. (Withdrawn) The device according to claim 30, wherein the RESURF layer has a planar pattern with a stripe shape in a first direction along the gate electrode in an element region where a semiconductor element is present, a plurality of RESURF layers are formed at an element terminating portion in a second direction perpendicular to the first direction, and the RESURF layers at the element terminating portion have a planar pattern with a stripe shape along the second direction.

37. (Withdrawn) The device according to claim 30, wherein the RESURF layers are arranged in a matrix.

38. (Withdrawn) The device according to claim 30, further comprising a fourth semiconductor layer formed between the RESURF layer and one of the first insulating film and first semiconductor layer, wherein the base layer is formed in surface regions of the drift layer, RESURF layer, and fourth semiconductor layer.

39. (Withdrawn) The device according to claim 38, further comprising a fifth semiconductor layer having the first conductivity type, which is formed between the RESURF layer and the drift layer and has an impurity concentration higher than that in the drift layer.

40. (Withdrawn) The device according to claim 38, wherein the fourth semiconductor layer has an impurity concentration lower than those in the drift layer and RESURF layer.

41. (Withdrawn) The device according to claim 38, wherein the fourth semiconductor layer has an impurity concentration almost equal to that in one of the drift layer and RESURF layer and the same conductivity type as that of the drift layer.

42. (Withdrawn) The device according to claim 27, further comprising one of a first insulating film and first semiconductor layer formed to extend from a surface of the drift layer to the drain layer, the first semiconductor layer having an impurity concentration lower than those in the drift layer and RESURF layer,

wherein the drift layer is located between the RESURF layer and one of the first insulating film and first semiconductor layer.

43. (Withdrawn) The device according to claim 42, wherein the drift layer is located between the drain layer and one of the first insulating film and first semiconductor layer and between the RESURF layer and one of the first insulating film and first semiconductor layer.

44. (Withdrawn) The device according to claim 42, further comprising:

a base layer having the second conductivity type and formed in surface regions of the drift layer and RESURF layer;

a source layer having the first conductivity type and formed in a surface region of the base layer; and

a gate electrode formed on the base layer between the drift layer and the source layer with a gate insulating film interposed therebetween.

45. (Withdrawn) The device according to claim 44, wherein

the drift layer has a planar pattern with a stripe shape in a first direction along the gate electrode in an element region where a semiconductor element is present,

at an element terminating portion, the RESURF layer is formed on the drain layer,

a plurality of drift layers are formed in the RESURF layers at the element terminating portion in a second direction perpendicular to the first direction, and

the plurality of RESURF layers at the element terminating portion are electrically connected.

46. (Withdrawn) The device according to claim 45, further comprising one of a conductive film and second semiconductor layer formed on the RESURF layer and drift layer to connect the plurality of RESURF layers at the element terminating portion.

47. (Withdrawn) The device according to claim 46, wherein an upper portion of one of the first insulating film and first semiconductor layer at the element terminating portion is recessed, and the recessed region is further filled with the drift layer.

48. (Withdrawn) The device according to claim 44, wherein

at an element terminating portion, the RESURF layer is formed on the drain layer,  
the drift layer has a planar pattern with a stripe shape in a first direction along the gate  
electrode in an element region where a semiconductor element is present,  
a plurality of drift layers are formed at the element terminating portion in a second  
direction perpendicular to the first direction, and  
the drift layers at the element terminating portion have a planar pattern with a stripe  
shape along the second direction.

49. (Withdrawn) The device according to claim 44, wherein the drift layers are  
arranged in a matrix.

50. (Withdrawn) The device according to claim 44, further comprising a third  
semiconductor layer formed between the drift layer and one of the first insulating film and  
first semiconductor layer,  
wherein the base layer is formed in surfaces of the drift layer, RESURF layer, and  
third semiconductor layer.

51. (Withdrawn) The device according to claim 50, wherein the third semiconductor  
layer has an impurity concentration lower than those in the drift layer and RESURF layer.

52. (Withdrawn) The device according to claim 50, wherein the third semiconductor  
layer has an impurity concentration almost equal to that in one of the drift layer and RESURF  
layer and the same conductivity type as that of the drift layer.

53. (Withdrawn) The device according to claim 44, wherein a bottom surface of the drift layer is located at a position deeper than a bottom surface of the RESURF layer.

Claims 54-71 (Canceled).